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C. multiplexing and demultiplexing weights using received signal measurements. In this manner, the signals from the current active subscriber stations, some of which may be active on the same conventional channel, are separated and interference and noise suppressed. When communicating from the base station to the subscriber stations, an optimized multi-lobe antenna radiation pattern tailored to the current active subscriber station connections and interference situation is created. Suitable smart antenna technologies for achieving such a spatially directed beam are described, for example, in U.S. Patents Nos. 5,828,658, issued Oct. 27, 1998 to Ottersten et al. and 5,642,353, issued June 24, 1997 to Roy, III et al.

Please delete the paragraph beginning on page 27, line 23 and insert the following paragraph:

A2 When the absolute timing is known, the entire training sequence can be identified. Accordingly a new weight vector calculation can be made using the entire training sequence including the marker sequence 624. This redetermined weight vector is still more accurate because of the larger number of samples that can be used. It is applied to the stored measurements to again convert the measurements from each antenna channel into a single channel 626. With the new single channel, the CR burst is demodulated and read 628.

Please delete the paragraph beginning on page 28, line 4 and insert the following paragraph:

A3 This processing structure yields accurate beamformer weights that can be used to receive the desired signal without determining perfect timing for the signal.
